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In claim 22, line 3, replace "position" with --location--.

In claim 36, line 2, replace "arranged to receive" with --for receiving--.

In claim 36, line 6, before "location" insert --first--.

In claim 38, replace "an LCD" with --a liquid crystal--.

39. (Amended) A system according to claim 36 wherein said GPS receiver means is a differential GPS receiver having means for receiving and applying a correction signal, and further comprising stationary differential GPS receiver/transmitter means for operating in conjunction with, and transmitting said correction signal to, said differential GPS receiver means and being positioned [arranged] at a known global earth location geographically located with respect to said golf course [, said stationary GPS receiver/transmitter means operating in conjunction with, and transmitting said correction signal to, said differential GPS receiver means].

In claim 42, line 3, replace "adaptable" with --adapted--.

Cancel claim 43.

to be in "selective comm."

**REMARKS****Overview**

This Amendment responds to the Office Action mailed September 6, 1994. The foregoing amendment cancels claims 2, 4 and 43. Claim 1 is amended to incorporate all of the limitations of claim 2. Accordingly, the claims formerly dependent on claim 2 are amended to depend from claim 1. Applicants also amend the claims to correct all matters of form raised by the Examiner. Applicants amend the Abstract in accord with the Examiner's objections.

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Additionally, the specification and the drawings are amended to correct matters of form. A proposed new Figure 11, which shows all of the recited elements of claim 35 that are not depicted in other drawings, is presented in response to the Examiner's objection to that claim.

The following Remarks address the Examiner's objection to the claims under 35 U.S.C. § 103, and establish the patentability of the claims over all art of record including, U.S. Patent No. 5,245,537 (Barber), U.S. Patent No. 5,319,548 (Germain), U.S. Patent No. 4,910,677 (Remedio *et al.*), U.S. 5,058,023 (Kozikaro), and "GPS Technology and Opportunities," Harris and Sikorski, Motorola, Oct. 30, 1993 (Harris *et al.*).

This Response and Amendment accordingly, addresses each point raised in the Action and places the Application in condition for allowance.

The Specification is Amended to Correct Matters of Form

In accordance with the Examiner's objection, in paragraph 2 of the Action, Applicants have amended the Abstract to remove all legal phraseology. Applicants have also corrected several typographical errors and have corrected awkward wording.

Applicants have amended the Specification in several places. First, Applicants have amended page 7 to include a brief description of newly added FIGURE 11. Support for this amendment can be found, among other places, in claim 35 and in paragraph 4 of page 11. Applicants have amended the description in paragraph 4 of page 11 to include reference designations to FIGURE 11.

In response to the Examiner's objection to claim 11 in paragraph 6 of the Action, Applicants have amended paragraph 1 of page 9 to incorporate the features of the invention recited in claim 11. Support for this amendment can be found, among other places, in claim 11; at page 4; at page 5, paragraph 3; and page 8, paragraphs 2-3.

Applicants have also amended the Specification to correct various typographical errors and to insert reference designations, where appropriate, with respect to new FIGURE 11. In

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accordance with the Examiner's objection in paragraph 4(A) of the Action, Applicants have amended the Specification to eliminate any reference to "802" in FIGURE 9. No new matter has been added.

Thus, Applicants have removed all formal objections to the Specification. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw all § 112 objections to the specification.

The Drawings are Amended to Correct Matters of Form

In accordance with the Examiner's objection in paragraph 4(A) of the Action, Applicants submit herewith a proposed new FIGURE 11, which depicts each and every element recited in claim 35, but not depicted in other drawings. No new matter has been added to the drawings. Formal drawings will be submitted following Notice of Allowability.

The Claims are Amended to Correct Matters of Form

Applicants have amended the claims to correct all formal objections raised by the Examiner. More particularly, in accordance with paragraph 7 of the Action, claim 43 has been canceled. In accordance with paragraph 8 of the Action, Applicants have entered the following amendments. Claim 3 has been amended to clarify that element C is part of the position interface electronics, not part of the master unit. Claim 4 has been amended to recite "adapted" as opposed to "adaptable" and to recite "golf cart" instead of "cart." Claim 5 has been amended to recite what the invention does, instead of its capabilities. Claim 10 has been amended to recite "data processor" instead of "processor." Claim 11 has been amended to recite how the position indicating signals are used to automatically determine which golf course is being played on. More particularly, claim 11 now recites that the system includes means for correlating the geographical location (recited in para. B of claim 1) with the digitized map representations to automatically determine which course is being played. Support for this amendment is found

claim 4 has been cancelled

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among other places in claim 1; claim 36; at page 4; at page 5, para. 3; and page 8, paras. 2-3. Claim 19 has been amended to correct a typographical error. Claim 22 has been amended to recite the term "field location." Claim 36 has been amended to recite the structure of the apparatus instead of its arrangements. Claim 38 has been amended to remove a redundancy. Claim 39 has been amended to more clearly recite the structure of the apparatus. Claim 42 has been amended to recite "adapted" instead of "adaptable." No new matter has been added to the claims.

Thus, Applicants have removed all formal objections to the pending claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw all § 112 objections to the claims.

**The Claimed Invention is Non-Obvious**

In paragraph 11 of the Action, the Examiner rejects claims 1, 2, 6-38 and 40-43, as unpatentable over Barber in view of Germain. The Barber reference discloses a golf distance tracking, club selection, and player performance statistics device. However, as the Examiner correctly points out in paragraph 11(A) of the Action, in contrast to claim 1, which recites that position indicating signals representative of a geographical location are received from an external source, Barber teaches internal generation of position indicating signals. Barber also fails to teach or suggest a processor for corresponding the geographical location of the mobile interface unit with stored digitized map representations to determine a field location of the mobile interface unit, as recited in paragraph C of claim 1.

The disclosure of Germain fails to remedy the deficiencies of Barber. Germain discloses an interactive golf game, wherein a player can manually record his/her performance on a paper card. The golfer can record information such as how far a particular shot is hit, ball position after each shot, club selection for each shot, and score for each hole. Following a round of golf the

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cards can be inserted into the system which reads the marks recorded by the golfer and processes the information to compile statistical information regarding the golfer's performance.

Germain fails to teach or suggest receiving position indicative signals from an external source, wherein those signals are representative of a geographical location, as recited in claim 1. The entire disclosure of Germain is generally directed to recording information, as a round of golf is being played, not to automatically determining position on a playing field, as recited in claim 1.

The passages of Germain cited by the Examiner simply disclose an alternate method by which information recorded by a golfer can be transmitted to a base station for processing. More specifically, at col. 14, lines 35-39, Germain discloses transmitting recorded information via satellite to a satellite receiver, not receiving position indicative signals from the satellite. Once again, at col. 14, lines 43-45, Germain teaches using a hand-held satellite signal transmitting device for transmitting a signal to a global position satellite to indicate an exact location, not to determine an exact location. This transmitting concept is further emphasized in col. 14, lines 46-55, where Germain explains that the hand-held device would also transmit a golfer identification and a club identification to the satellite. Germain further explains that a satellite signal receiver can be provided to receive the signals transmitted by the hand-held transmitting device. (Col. 14, lines 50-53).

Thus, it appears that Germain teaches the possibility of transmitting information such as the location of the golf ball and the golf club selected to a satellite, possibly for retransmission from the satellite to a base station for processing. Nowhere does Germain teach or suggest a mobile interface unit including position interface electronics for receiving position indicative signals from an external source, along with a data processor for corresponding the position indicative signals to field location, as recited in claim 1.

Moreover, Applicants have amended claim 1 to incorporate the further limitations of claim 2, thus, reciting that the external source is a Global Positioning System satellite

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constellation and that the processor includes means for processing the position indicative signals to determine the geographical location of the mobile interface unit. As a result, the recitations of amended claim 1 further distinguish the invention over Barber and Germain. Claim 36 remains unamended, except with respect to correction of informalities. However, claim 1, as originally filed, recites reception of a global earth position, along with a processor for correlating the global earth position to a location on a golf course.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw all § 103 rejections of claims 1 and 36 based on Barber and Germain. Additionally, since claims 6-35 depend from claim 1 and recite further limitations thereon, Applicants further request that the Examiner reconsider and withdraw the § 103 rejections of those claims that are based on Barber and Germain. Also, since claims 37-42 depend from claim 36 and recite further limitations thereon, Applicants request that the Examiner reconsider and withdraw the § 103 rejections of those claims that are based on Barber and Germain.

Additionally, Applicants request that the Examiner note that none of the cited references teach or suggest automatically identifying which course is being played, as recited in claim 11, nor do they teach or suggest automatically identifying which hole on a golf course is being played, as recited in claims 13 and 21. The cited references also fail to teach or suggest dynamically updating the displayed portion of a hole being played, in response to the position of the mobile interface unit being changed, as recited in claim 22. Additionally, Applicants contend that there is no teaching or suggestion in any of the cited references for incorporating a voice activated interface into a portable distance tracking system, as recited in claim 8. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw all rejections of these claims, based on any of the cited references.

In paragraph 12 of the Action, the Examiner rejects claim 5 as being unpatentable over Barber in view of Germain and Remedio. As previously discussed, neither Barber nor Germain teach or suggest a portable distance tracking system that receives position indicating signals from

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a GPS constellation and processes those signals to determine location on a playing field, as recited in amended claim 1 and in claim 36, as originally filed. Remedio fails to remedy the deficiencies of Barber and Germain. Since claim 5 depends from claim 1 and recites further limitations thereon, Applicants respectfully request that the Examiner reconsider and withdraw the § 103 rejection of that claim, based on the cited references.

In paragraph 13 of the Action, the Examiner rejects claims 3 and 39 as being unpatentable over Barber in view of Germain and Harris et al. As discussed in detail above, neither Barber nor Germain teach or suggest a portable distance tracking system that receives position indicating signals from a GPS constellation and processes those signals to determine location on a playing field, as recited in amended claim 1 and in claim 36, as originally filed. Harris et al. fail to remedy the deficiencies of Barber and Germain. Since claim 3 depends from claim 1 and recites further limitations thereon, and since claim 39 depends from claim 36 and recites further limitations thereon, Applicants respectfully request that the Examiner reconsider and withdraw the § 103 rejection of those claims, based on the cited references.

In paragraph 14 of the Action, the Examiner rejects claim 1 over Barber in view of Kozikaro. As detailed below, Applicants take issue with this position. Barber fails to teach or suggest important features of the claimed invention. More particularly, Barber fails to teach or suggest a portable distance tracking system that includes position interface electronics for receiving position indicative signals from an external source, wherein those signals are representative of a geographical location, as recited in paragraph B. of claim 1, as originally filed. Barber also fails to teach or suggest a data processor for corresponding the geographical location of the mobile interface unit with stored digitized maps to determine a location on a playing field, as recited in paragraph C of claim 1.

In contrast to the claimed invention, Barber teaches the use of internally generated signals that are representative of a location related to a reference location on a golf course. Thus, not only does Barber fail to teach or suggest the use of externally generated position indicative

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signals, but it also fails to teach or suggest the use, in any form, of signals that are representative of a geographical location, as recited in claim 1.

Kozikaro fails to remedy the significant deficiencies of Barber. More particularly, Kozikaro fails to teach receiving externally generated signals representative of a geographical location and a data processor for corresponding the geographical location of the mobile interface unit with stored digitized maps to determine a location on a playing field, as recited in paragraph C of claim 1. In contrast, Kozikaro teaches the use of dead reckoning to calculate a vehicle position and heading based on a prior position and inputs from differential wheel sensors. These signals are not representative of a geographical location, within the meaning of claim 1. Instead, they are representative of a relative location, with respect to a previous location of the vehicle. According to the recitation of claim 1, the invention determines a field position, not from a relative change in position, as recited in Kozikaro, but instead from corresponding externally generated signals representative of a geographical location with a stored digitized map of a playing field.

Additionally, claim 1 has been amended to further distinguish over the cited references by incorporating the limitations of claim 2 into claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the § 103 rejection of claim 1 based on the combined teachings of Barber and Kozikaro.

### CONCLUSION

The above amendment is filed in response to the Office Action dated September 6, 1994. The amendments clarify the claimed subject matter and the remarks point out significant differences between the claimed invention and the cited art. Accordingly, reconsideration and allowance of the application with pending claims 1, 3, and 5-42 are requested. Formal drawings



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will be submitted following Notice of Allowability. If there are any remaining issues, the Examiner is urged to call the undersigned at the telephone number indicated below.

Respectfully submitted,

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